

71A

Monsanto

*Copy &
Mike Sanderson
Route 6*

MONSANTO INDUSTRIAL CHEMICALS CO.
1700 South Second Street
St. Louis, Missouri 63177
Phone: (314) 622-1400

*Craig Smith
Ken Heade*

June 2, 1986

RECEIVED

JUN 06 1986

SUPERFUND BRANCH

Mr. Robert L. Morby
Chief, Superfund Branch
Waste Management Division
Environmental Protection Agency
726 Minnesota Avenue
Kansas City, Kansas 66101

Dear Mr. Morby:

Enclosed is a copy of the OH Materials, Inc. report on
cleanup activity completed to date.

Sincerely,

Robert F. Boland

Robert F. Boland
Environmental Protection Superintendent

RECEIVED

JUN 08 1986

USEPA, RCRA Branch



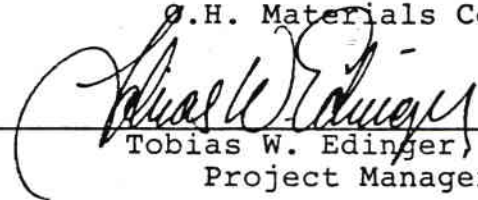
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RCRA RECORDS CENTER
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FINAL REPORT
FOR MONSANTO INDUSTRIAL
CHEMICALS COMPANY
J. F. QUEENY PLANT

Submitted to:

Monsanto Industrial Chemicals Company
St. Louis, Missouri

G.H. Materials Co.



Tobias W. Edinger, P.E.
Project Manager

July 17, 1985
Project File No. 2582



THE ENVIRONMENTAL SERVICES COMPANY

O.H. MATERIALS CO.
16406 U.S. Route 224 East
P.O. Box 551
Findlay, Ohio 45839-0551
Phone: 419-423-3526
800-537-9540 (24 hr)
800-537-5660 (in Ohio)
Telex: 298248 OHMI UR (RCA)

July 19, 1985

Mr. Thomas R. Alvarez
Senior Environmental Project Engineer
Monsanto Industrial Chemicals Company
J.F. Queeny Plant
1700 South Second Street
St. Louis, MO 63177

Dear Mr. Alvarez:

RE: OHM Project File No. 2582 Decontamination of Buildings QQ, Q,
WW, and AA Final Report

OHM is pleased to present the final report for the subject project.

We sincerely hope Monsanto was satisfied with OHM's performance on this project, and we look forward to being of continued service.

Should you have any questions concerning the report or require additional information, please do not hesitate to contact me at 800-537-9540.

Sincerely yours,



Tobias W. Edinger, P.E.
Project Manager

TWE:rak

Enclosure

pc: Project File No. 2582

TABLE OF CONTENTS

1.0	INTRODUCTION AND PROBLEM STATEMENT.....	1-1
2.0	PROJECT OVERVIEW	2-1
2.1	MOBILIZATION AND SET UP.....	2-1
2.2	BUILDING PREPARATION.....	2-1
2.3	HYDROBLAST OPERATIONS.....	2-2
2.4	WASHWATER TREATMENT SYSTEM.....	2-2
3.0	SCHEDULE.....	3-1
4.0	PROJECT COST.....	4-1
5.0	SUMMARY.....	5-1

APPENDIX A - SITE SAFETY PLAN

1.0 INTRODUCTION AND PROBLEM STATEMENT

Monsanto Industrial Chemicals Company (MONSANTO) owns and operates a large-industrial chemical manufacturing facility, the J. F. Queeny Plant, in St. Louis, Missouri. Some time between 1948 and 1963, a portion of the plant was utilized in the process of converting 2,4,5-T into esters of 2,4,5-T. Because a low-level contaminant, 2,3,7,8-tetrachlorodibenzo-p-dioxin (dioxin) is typically present in 2,4,5-T all buildings associated with the storage and/or use of 2,4,5-T were inventoried. MONSANTO has recently completed a program designed to determine the presence, degree, and extent of dioxin in those buildings.

Results of the sampling and analytical program indicated that dust on surfaces within four buildings at the site was contaminated with dioxin at levels below 25 parts per billion (ppb).

In response to this finding, MONSANTO quickly initiated a program to remove all traces of dioxin in the Q, QQ, AA, and WW buildings at the facility. O.H. Materials Co. (OHM) was enlisted to perform the work and a description of our project operation and schedule follows.

2.0 PROJECT OVERVIEW

The primary objective of the project was to clean the interior surfaces of Buildings Q, QQ, AA, and WW in such a manner that no accessible sample of dirt, grit, dust, or other residue exhibited more than 1 part per billion (ppb) of dioxin and no 100 square centimeter wipe sample exhibited dioxin at detectable limits in accordance with analytical method described in USEPA Region VII publication "Determination of 2,3,7,8-TCDD in Soil and Sediments", September 1983. Should any sample exceed these limits, OHM was to clean a maximum of three times to meet the stated criteria.

Secondary objectives to be met during the performance of the work included development and implementation of engineering and industrial hygiene controls to prevent contaminant migration to outside areas as well as to provide necessary protective equipment and training to ensure the safety of all involved. As a result of this effort a site-specific safety plan was developed and is included as Appendix A.

2.1 MOBILIZATION AND SET UP

A site visit was made March 26, 1985, by OHM's T. Edinger, Project Manager; D. Mummert, C.I.H., Industrial Hygienist; S. Brigner, Project Supervisor; and P. Hoopes, Missouri Division Manager. A tour of the site was conducted by MONSANTO's T. Alvarez, Project Engineer and J. Winklemann, Industrial Hygiene Supervisor, for the purpose of determining the limits of the work and to make support arrangements.

Equipment and personnel were mobilized from the Missouri division as well as the Findlay corporate offices March 26, 1985, and arrived on site March 27, 1985.

Set up of support equipment as well as the wastewater treatment plant was completed March 30, 1985. MONSANTO provided the necessary utilities to support both the wastewater treatment plant and the support equipment. Portable generators were used, however, to power the chemical mixing systems and several control pumps of the wastewater treatment plant.

2.2 BUILDING PREPARATION

During building preparation, the first operation performed was the establishment of the exclusion zone. The purpose of the exclusion zone is to clearly identify the limits of the work area and prevent unprotected personnel and bystanders from accidental entry into contaminated areas. Visqueen barriers were erected at the designated

entrance to the work area; all other entrances to the building were sealed. Areas were provided for OHM personnel to don protective clothing prior to entering the exclusion zone and for decontamination upon exiting to prevent contaminant migration.

During building preparation, removal of gross deposits of soil, grit, and dust was accomplished using vacuum equipment with HEPA filters. Heavier deposits were removed by hand scraping and/or shoveling followed by vacuuming. The soil and debris collected was deposited in drums provided by MONSANTO and staged in Building QQ pending disposal by MONSANTO .

Surfaces which could not be treated using high-pressure water cleaning techniques were hand wiped using shop-wipes treated with Soilax. Cleaning materials were drummed and treated as dioxin waste.

The final step in building preparation was the installation of temporary washwater containment barriers to prevent washwater from penetrating the building exterior. Electrical and other equipment/surfaces which could not be cleaned using the hydroblast technique were covered with plastic and sealed. Cracks in walls and windows were plugged with sorbent pads, caulked with silicone, and/or sealed using Insta-foam packs. Temporary dikes were constructed at all entrances to the structures to capture washwater. Floor drains were plugged to prevent drainage of contaminated washwater and hence contamination to the plant water recovery systems.

2.3 HYDROBLAST OPERATIONS

All building surfaces received an aggressive cleaning using a portable hydroblaster which applied water at an average of 2,500 pounds per square inch (psi). The hydroblaster was equipped with two wands, and when practical, more than one surface was cleaned simultaneously. Ceilings and other high areas were reached using lift platforms and extensions for the hydroblaster wands.

During hydroblast operations, washwater was continuously being recovered. Recovery technicians recovered the water using squeegees to pool the water and debris which was then vacuumed using a 3,500-gallon vacuum truck. The vacuum truck was then used to transport the recovered washwater to the wastewater treatment plant. Large amounts of paint chips and debris were recovered along with the washwater slowing hydroblast operations.

2.4 WASHWATER TREATMENT SYSTEM

Recovered washwater was treated prior to acceptable discharge levels by an on-site wastewater treatment plant operated by OHM's well-trained field chemist.

The wastewater treatment plant consisted of the following equipment:

- o 12,000-gallon raw water storage pool
- o Rapid mix tank
- o Clarifier
- o Sand filter
- o Two 9,000-pound activated carbon filtration units
- o Bag filter (polishing)
- o 12,000-gallon effluent storage pool

Due to a significant variance in the characteristics of the washwater, the treatment system was operated in a batch mode. pH, flocculants, and flow rates were adjusted continuously to achieve the highest treatment efficiency possible.

Treated water was held in the effluent holding pool. Samples were taken and delivered to MONSANTO for analysis. No water was discharged to the MONSANTO wastewater treatment system without obtaining the prior approval of Tom Alvarez.

A total of 75,000 gallons of washwater were treated. Upon tear-down of the treatment system, expended carbon, sludge, pool liners, and other waste products were drummed and staged in Building QQ pending disposal by MONSANTO.

3.0 SCHEDULE

The project schedule was as follows:

<u>Task</u>	<u>Date Accomplished (1985)</u>
o Mobilization	
- Commenced mobilization	March 25
- Arrived on site	March 26
o Building QQ	
- Started	March 27
- Completed preparation	March 30
- Completed hydroblast operation	April 4
- Passed analytical	April 11
o Building Q	
- Started	March 30
- Completed preparation	April 3
- Completed hydroblast operations	April 12
- Passed analytical	April 19
o Building WW	
- Started	April 3
- Completed preparation	April 11
- Completed hydroblast operations	April 24
- Passed analytical	April 26
o Building AA	
- Started	April 12
- Completed preparation	April 20
- Completed hydroblast operations	May 2
- Passed analytical*	May 3
o Demobilization	
- Started	May 3
- Completed	May 3

*Two small areas exhibited detectable dioxin concentrations. These areas were re-cleaned and accepted by MONSANTO on May 3, 1985.

4.0 PROJECT COST

OHM proposed a total project cost of \$503,000 on a time-and-materials "not-to-exceed" basis. The actual project cost was \$485,892.04, approximately \$17,100 less than proposed. A breakdown by building of the total project cost is as follows:

<u>Building</u>	<u>Cost</u>
QQ	\$ 77,742
Q	102,039
WW	155,485
AA	<u>150,626</u>
TOTAL PROJECT COST	<u><u>\$485,892</u></u>

5.0 SUMMARY

Four structures exhibiting traces of dioxin contamination (those being Buildings QQ, Q, WW, and AA) were cleaned by OHM during the period of March 26, 1985, through May 3, 1985. Analytical results provided to OHM by MONSANTO indicated that residual concentrations of dioxin were nondetectable. The cleaning was performed using hydroblast techniques with washwater being recovered and treated on site. All cleaning materials, sludges, and other contaminated materials were drummed and staged at the plant in building QQ pending disposal by MONSANTO. Operations were conducted in strict conformance with the OHM Site Safety Plan provided as Appendix A of this report.

APPENDIX A
SITE SAFETY PLAN

SITE SAFETY PLAN

The Monsanto Company
John F. Queeny Plant
Buildings Q, QQ, WW, AA
St. Louis, Missouri

I. STATEMENT OF HAZARD

This is a low-level (1-25ppb) 2,3,7,8-tetrachlorodibenzo-p-dioxin (dioxin) decontamination of two warehouses and two production facilities. These buildings were used during the processing of 2,4,5-T into esters of 2,4,5-T at some time between 1948 and 1963. The scope of work will entail high pressure washing (lasering) of interior building surfaces with water. Delicate surfaces or equipment will be hand wiped and covered with plastic prior to lasering.

Personnel working inside the building will be subjected to low-level TCDD as a contact hazard on surfaces and possibly as an airborne particulate.

Asbestos insulation of pipes and certain equipment is present in buildings WW and AA. These surfaces will be hand wiped and covered prior to lasering. After cleaning, the coverings will be carefully removed as to not disturb this material. The specified personal protective equipment and decontamination procedures will be sufficient to protect workers from any anticipated surface or airborne asbestos exposures.

Buildings WW and AA are production or operating facilities. Monsanto has ensured that all piping and reactors will be empty during the cleaning process. They will provide OHM Safety and Health Department with Material Safety Data Sheets for the last materials used in these areas. OHM Safety and Health Department will review these for any possible impacts on OHM personnel due to accidental disruption of this equipment.

The northwest corner of Q building produces a chemical called TCC. From the Material Safety Data Sheets (Appendix A) the compound appears practically nontoxic. However, Monsanto personnel have cautioned that in the unlikely event of a large discharge of TCC, coupled with a high heat source (greater than 300 F), an explosive condition could exist. If a large cloud of this material is seen, evacuate the area and summon Monsanto personnel (Telephone Number 2222) for further guidance.

All electrical systems will be de-energized and secured with a double lockout by Monsanto personnel prior to cleaning of areas.

Due to heights and limited accessibility of certain areas; scaffolds, ladders, and lifts must be used. Special attention will be paid to ensure these comply with all OSHA regulations.

The high pressure washers OHM uses present hazards from skin contact (cutting and injection) and noise. Refer to Appendix B for an outline of specific hazards and precautions.

II. WORK ZONES

- A. General - The work areas will be divided into 3 "zones," an Exclusion or "Hot Zone," a Contamination Reduction Zone, and a Support Zone. The Exclusion Zone will consist of the entire building interior and all personnel entering the Exclusion Zone will wear the prescribed level of protective equipment. All personnel will enter and leave the Exclusion Zone through the Contamination Reduction Zone in order to prevent cross-contamination and for accountability purposes. The Support Zone is a "clean" zone and persons passing from the Exclusion Zone to the Support Zone will decontaminate in the Contamination Reduction Zone at a Decontamination Area.
- B. Exclusion Zone - The entire interior of the building will be considered as a respiratory and contact health hazard area. All entrances to the building will be blocked by yellow hazard tape.
- C. Contamination Reduction Zone - Entrance to each building will be through one doorway. In some areas, a plywood and plastic enclosed structure will be built and positioned at the doorway or just inside the building. In areas where the contamination reduction structure cannot be placed, an area will be marked off for this function. All areas and the structure will be clearly marked "Decontamination Area." Personnel in this area may be subject to a moderate respiratory hazard.
- D. Support Zone - The Support Zone will consist of those areas where the decontamination/office trailer, shower trailer, galley trailer, and water treatment area are located. Smoking will only be permitted inside the office section of the decontamination trailer and galley trailer. Eating can only take place in the galley trailer or office section of the decontamination trailer.

III. PROTECTIVE EQUIPMENT

A. Exclusion Zone

- 1. Personnel entering the Exclusion Zone will wear the following when high pressure washing is in progress:

Coveralls

Saran coated Tyvek protective suit with hood

Vinyl sample gloves

- PVC splash suit
- Steel-toed shoes/boots
- Vinyl booties
- Robar boots
- PVC gloves
- Hard hat with face shield
- Full facepiece air purifying respirator, equipped with R-53HE cartridges

All joints will be taped with vinyl duct tape.

2. At times other than when high pressure washing is in progress (but at least 60 minutes after high pressure washing has concluded), the following level of protection is permitted:

- Vinyl sample gloves
- Coveralls
- Tyvek suit with hood
- Full facepiece respirator with R53-HE cartridges
- Steel-toed boots/shoes
- Vinyl booties
- Hard hat with face shield
- PVC gloves

All joints will be taped with vinyl duct tape.

IV. DECONTAMINATION PROCEDURES

- A. General - Decontamination of personnel shall be accomplished to ensure that dioxin or other material which personnel may have contacted in the Exclusion Zone are removed in the Contamination Reduction Zones before personnel pass to the Support Zone.
- B. Decontamination of High Pressure Washing Personnel - Decontamination will be as follows in the order listed:
 1. Personnel will be damp wiped at the perimeter of the Exclusion Zone. The wipe will be disposed of as solid waste. Personnel will then enter the Contamination Reduction Zone.
 2. Robar boots will be scrubbed with a detergent water solution. The boots are then removed and stacked for drying.
 3. Hard Hat is removed, scrubbed with detergent and stacked for drying.
 4. PVC suits (including gloves) are scrubbed with detergent, removed, and hung up to dry.

5. Vinyl booties are discarded.
 6. Saran coated Tyvek suits are discarded.
 7. Sample gloves are discarded.
 8. The respirators will be removed and suitably stored on breaks and at lunch. At shift's end, the cartridges will be discarded and respirator deposited in a cleaning solution.
 9. Personnel will wash hands, arms, face, and neck before breaks or lunch. A complete shower will be taken at day's end.
- C. Decontamination of Personnel Involved in Other Than High Pressure Washing - Decontamination will be as follows in the order listed:
1. At the perimeter of the Exclusion Zone, wash vinyl booties in a detergent solution and dry. Enter Contamination Reduction Zone.
 2. Remove booties and discard.
 3. Remove hard hat, wash, and stack to dry.
 4. Remove Tyvek suit and discard.
 5. Remove outer PVC gloves and discard.
 6. The respirators will be removed and suitably stored on breaks and at lunch. At shift's end, the cartridges will be discarded and respirator deposited in a cleaning solution.
 7. Remove sample gloves and discard.
 8. Depart Contamination Reduction Zone in coveralls and boots.
 9. Personnel will wash hands, arms, face, and neck before breaks or lunch. A complete shower will be taken at day's end.
- D. Other Decontamination Procedures - For personnel assisting in decontamination in the Contamination Reduction Zone will be in Level "D" Protection. This consists of coveralls, boots, PVC gloves, hard hat with splash goggles and safety glasses. All personnel will wash hands, arms, face, and neck before breaks or lunch. A complete shower will be taken at day's end.

All liquids, with the exception of shower, laundry, and personal wash water, will be treated as contaminated waste and disposed of properly by drumming (if solid) or treated in the water treatment system. Personnel handling contaminated waste will wear Level "D" protection as outlined above.

V. EMERGENCY PROCEDURES

- A. Emergency Notification - In the event of any emergency; fire, ambulance, police, or hospital, contact Monsanto security at telephone number 2222. They will arrange for the appropriate response. This telephone number shall be prominently posted near each telephone.
- B. Emergency Equipment - An emergency equipment station will be set up in each operative decontamination area consisting of the following:

- Eye wash station
- First aid kit
- Fire extinguisher
- Portable shower

Each station will be prominently marked. Additional fire extinguishers are located in the decontamination/office trailer and galley trailer. A stretcher is located in the decontamination/office trailer.

Additionally, Monsanto has fire extinguishers and eye wash/showers in the buildings and surrounding areas. The eye wash and showers are marked with green lights.

- C. Emergency Signal - The OHM emergency signal shall be a continuous 30-second blast on a hand-held air horn. Horns will be located in the decontamination trailer and at the outer perimeter of each Contamination Reduction Zone. In an emergency, all personnel shall assemble in the Support Zone and be accounted for and given directions as how to proceed by the Site Supervisor or, in his absence, by the Senior Foreman present. If personnel are working in the exclusion Zone, they will exit through the most practical exit. Decontamination will be accomplished in the most practical means available if the emergency warrants rapid egress from the Exclusion Zone.

Monsanto has its own established emergency evacuation signals. Plant-wide evacuation is signaled by an announcement over P.A. System and 10 blasts of air horn, 3 times. Fire signal for Zone 1, where OHM is working, is a siren and one long blast of an air horn. The all-clear signal is an announcement over P.A. System and one long blast of air horn.

Monsanto personnel will brief OHM employees as to evacuation routes and assembly areas. Additionally, instructions are posted near most building exits. Refer to Appendix C for more information.

- D. "Buddy" System - All workers in the Exclusion Zone will use the "Buddy" System. Prior to entering the Exclusion Zone, buddies will be assigned. Buddies will keep in visual contact with their respective buddy at all times. Buddies are responsible to ensure the safety of their buddy and should be aware of the potential for exposure to dioxin, high pressure washing equipment, electrical hazards, heat stress, and general hazards of the workplace.

VI. RESPIRATORS

- A. Respirators - Respirator condition will be checked by a qualified individual and before each use by the wearer. Positive and negative pressure fit tests will be performed each time the respirator is donned and occasionally while in use. Cartridges will be changed daily. High levels of dust or water saturation of HEPA filter due to water spray may make more frequent changes necessary. Respirators will be decontaminated, repaired, and stored according to standard OHM operating procedures. At least weekly, a quantitative fit test will be made by the Site Supervisor using isoamyl acetate.

VII. GENERAL SAFETY

- A. Safety Official - The Site Supervisor is the primary safety official for the Company at the site. In his absence, the Senior Foreman becomes the primary safety official.
- B. Daily Safety Meeting - A safety meeting shall be held daily before work commences. The scope of work for the day, hazards of the work, hazards of the material used, dioxin hazards, use of respirators, decontamination, and hazardous areas of the job shall be discussed. Periodically, general subjects such as lab safety, electrical safety, defensive driving, and heat stress shall be discussed.

Monsanto personnel will discuss plant safety, evacuation procedures and other topics as needed at these meetings.

- C. Eating - Eating and drinking shall be permitted only in the galley and the office section of the decontamination trailer.

- D. Smoking - Smoking shall be permitted only in the galley and office section of the decontamination trailer. These areas will be prominently marked. All smoking materials will be disposed of in sand filled buckets. No matches or lighters are permitted inside Monsanto gates. Use the electric wall mounted cigarette lighters.
- E. Waste Water Treatment Area - An area in which potentially contaminated waste water will be treated will be established and a tape barrier erected with "Danger" signs prominently posted. Personnel operating the water treatment system shall wear general splash protection.
- F. Parking - Parking will be permitted only in designated areas.
- G. Hazardous Waste Drum Storage - An area will be designated and prominently posted for hazardous waste drums. Full drums shall be positioned and stored as directed by Monsanto personnel.
- H. Industrial Hazards - All personnel are reminded that this is an operating industrial area, with hazards associated with such an area. Hard hats equipped with splash goggles and safety glasses shall be worn at all times when not inside support trailers. OHM personnel shall not wander about the area.
- I. Site Safety Inspections - A Corporate Health and Safety Representative will inspect the site at least monthly. The Site Supervisor should inspect the site weekly and fill out the Safety Inspection Form (Appendix D).
- J. Safety Re-evaluation - As conditions change, the Site Supervisor may institute more or less stringent procedures than those outlined in this plan. Any reduction of safety will only be instituted after consultation with appropriate Health and Safety Personnel at Corporate Headquarters.

DM:dat

Appendices (4)

Monsanto MATERIAL SAFETY DATA

Page 1 of 4

MONSANTO PRODUCT NAME

**TCC® BAR SOAP
BACTERIOSTAT**

MONSANTO COMPANY
800 N. LINDBERGH BLVD.
ST. LOUIS, MO 63167

Emergency Phone No.
(Call Collect)
314-694-1000

PRODUCT IDENTIFICATION

Synonyms:	3,4,4'-Trichlorocarbaniide; Triclocarban; Urea, N-(4-chlorophenyl)-N'-(3,4-dichlorophenyl)-
Chemical Formula:	C ₁₃ H ₉ Cl ₃ N ₂ O
CAS No.:	101-20-2
DOT Proper Shipping Name:	Not Applicable
DOT Hazard Class/ I.D. No.:	Not Applicable
DOT Label(s):	Not Applicable
Hazardous Substance(s)/ RQ(s):	Not Applicable
U.S. Surface Freight Classification:	Chemicals, NOIBN

PRECAUTIONARY MEASURES AND FIRST AID

HANDLE IN ACCORDANCE WITH GOOD INDUSTRIAL HYGIENE AND SAFETY PRACTICES. THESE PRACTICES INCLUDE AVOIDING UNNECESSARY EXPOSURE AND REMOVAL OF THE MATERIAL FROM EYES, SKIN AND CLOTHING.

Bacteriostatic agent for use only in antibacterial medicated soaps and deodorant bars.

FOR MANUFACTURING USE ONLY.

Note: Monsanto has not developed safety data for other applications and expressly disclaims all liabilities arising therefrom.

OCCUPATIONAL CONTROL PROCEDURES

Eye Protection:	TCC® bar soap bacteriostat does not present significant eye irritation or eye toxicity requiring special protection.
Skin Protection:	TCC bar soap bacteriostat does not present significant skin concern requiring special protection.
Respiratory Protection:	Use NIOSH approved equipment when airborne exposure is excessive. Consult respirator manufacturer to determine appropriate type equipment for given application.

(Occupational Control Procedures Continued On Next Page)

MATERIAL SAFETY DATA

PHYSIOLOGICAL EFFECTS SUMMARY (Continued)

Patch testing of 100 human volunteers produced no positive responses initially, following serial applications, or to a subsequent challenge. TCC® bar soap bacteriostat is not a primary irritant, fatiguing agent, or sensitizing agent.

PHYSICAL DATA

Appearance and Odor: Fine, white to greyish-white powder; slight characteristic

Melting Point: 250-255°C

Specific Gravity @ 25°C: 1.53

Vapor Pressure @ 25°C (mm Hg): <0.1

Solubility: Practically insoluble in water (56 ppb @ 25°C); slightly soluble in most commonly used organic solvents; soluble up to 15-20% by weight in certain nonionic detergents

Note: These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

SPILL, LEAK & DISPOSAL INFORMATION

Waste Disposal: Discarded product should be incinerated or placed in an approved landfill in accordance with local, state and federal regulations.

Spill or Leakage Procedures: Sweep up and incinerate or place in approved landfill in accordance with all federal, state and local regulations. Keep out of watersheds and water systems.

ADDITIONAL COMMENTS

When administered by oral, dermal, or intravenous routes to various species (man, monkey, rat), TCC is rapidly eliminated from the body in the form of polar metabolites. Approximately 60-80% of the dose appears in the feces with the remainder in urine. In primates, TCC is readily converted to monohydroxylated sulfate conjugates and eliminated in the bile. N-glucuronides are the major urinary metabolites.

Because of potential for toxicity to aquatic organisms, wastes containing TCC should not be discharged to the environment without proper treatment. Municipal sewage treatment facilities provide adequate removal.

DATE: 11/1/83
MSDS NO.: 000101202

REVISED: X

SUPERSEDES:

FOR ADDITIONAL NON-EMERGENCY INFORMATION, CONTACT:

Product Acceptability Coordinator
Detergent Materials
Monsanto Industrial Chemicals Co.
314-694-2096
(A Unit of Monsanto Company)

MATERIAL SAFETY DATA

TCC® Bar Soap Bacteriostat

DANGER LASER AT WORK

The high pressure washers (lasers) that our company uses are one of the most effective pieces of equipment the company owns, but also one of the most potentially dangerous. The manufacturer and this company have set safety precautions to be followed by the user to make the "laser" a safe piece of equipment.

1. Safety equipment to be worn by the operators:
 - A. Goggles
 - B. Hard hat with face shield
 - C. Ear protection
 - D. Steel-toed shoes
 - E. Heavy duty rubber suit, boots, and gloves
 - F. Aluminum foot and leg guards
2. The lance must always be pointed at the work area.
3. The operator must maintain good footing.
4. The operator must have an assistant to assist in moving the hose to different areas.
5. Non-operators must remain a safe distance from the operator. The distance must be a minimum of 25 feet.
6. The operating pressure should never exceed that which is necessary to complete the job.
7. No unauthorized attachment may be made to the unit. (The trigger should never be tied down.)
8. Operators should be changed at frequent intervals to avoid fatigue.
9. All operators must be properly trained in the use of the power washer.
10. Equipment should be cleaned often to avoid dirt build-up, especially around the trigger and guard area.

FAT S NEW

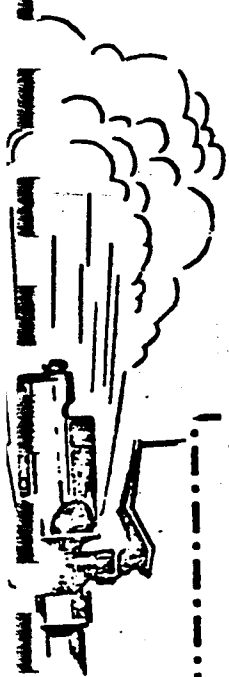
**SPECIAL
EDITION**

AT J F Q

nto

EMERGENCY EVACUATION PROCEDURE

October 1982

- 
- * When an emergency arises, call Station 2222 to report the incident. The Guard Office, Plant Fire Dept., Night Superintendents, and the Plant Dispensary all have extensions of this line and will listen to your call. Do not hang up until you have been understood.
 - * The departmental shutdown procedure might then be initiated. Make sure you know what this procedure is in your department.
 - * When the department evacuation whistle is sounded and/or a P.A. announcement is made by the Guard, all personnel in the department must evacuate to their departmental assembly point.
 - * If the emergency becomes plantwide, all personnel must evacuate the plant and assemble at the Primary Plantwide Assembly Area (shaded on the map). Signs will be installed along the fence to designate your assembly location. For a plantwide evacuation, there will be 10 blasts of the air horn, 3 times and a P.A. announcement from the Guard.
 - * The Alternate Assembly Area is used as BACK-UP ONLY. Unless announced differently over the P.A. systems, the PRIMARY ASSEMBLY AREA WILL BE USED FOR ALL PLANTWIDE EVACUATIONS.
 - * Remain at the Plantwide Assembly Area until headcount is taken, the all-clear signal has been sounded and supervision tells you to return to your department.

EVACUATION

NT OVER P.A.
J 10 BLASTS OF
R 3 TIMES

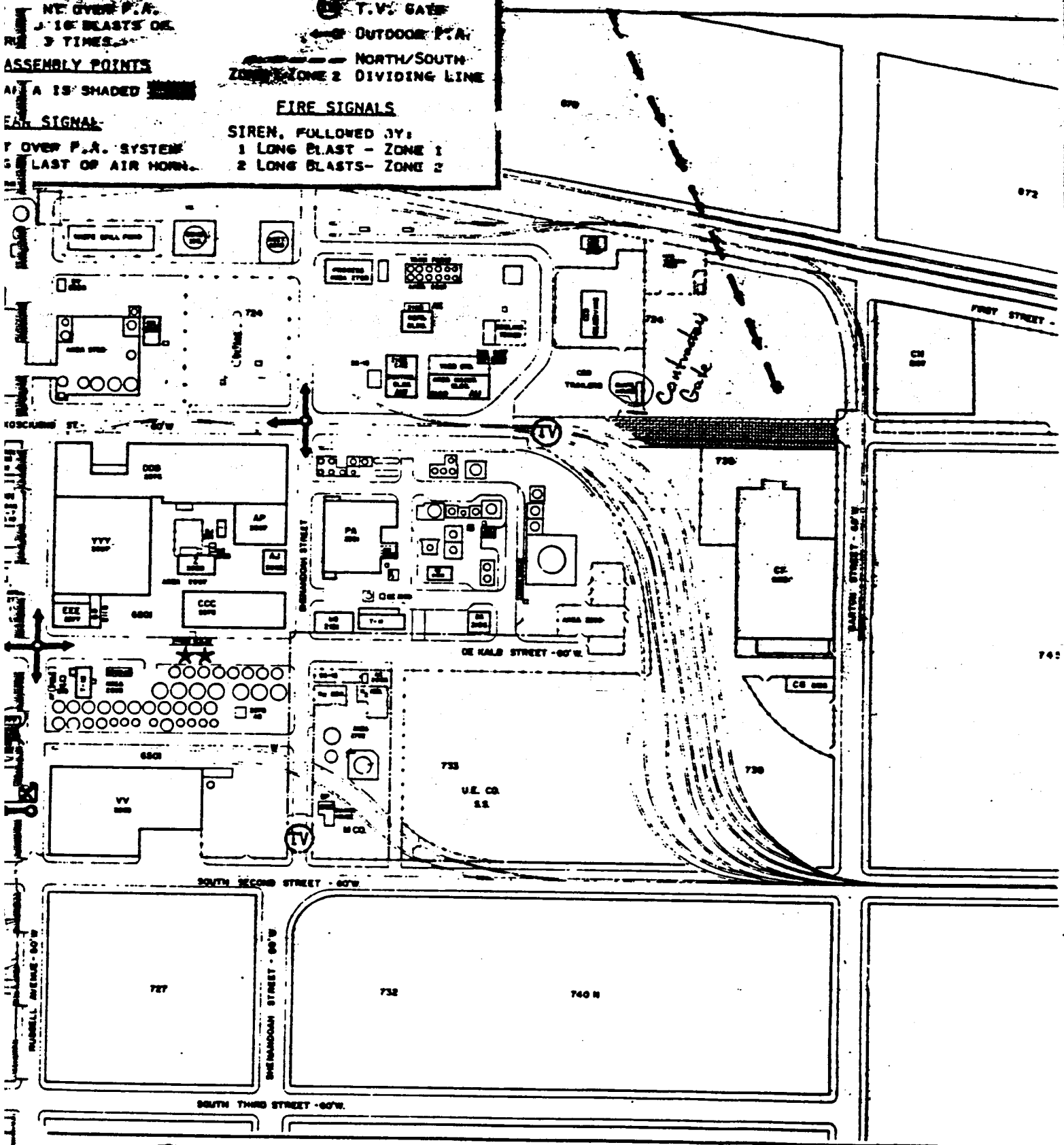
ASSEMBLY POINTS
AREA IS SHADED

FIRE SIGNAL
T OVER P.A. SYSTEM
LAST OF AIR HORN

SYMBOLS
T.V. GATE
OUTDOOR P.A.
NORTH/SOUTH
ZONE 2 DIVIDING LINE

FIRE SIGNALS
SIREN, FOLLOWED BY:
1 LONG BLAST - ZONE 1
2 LONG BLASTS - ZONE 2

**EVACUATION ASSEMBLY AREA
(SOUTH)**





Contractor's Name _____

Project Location _____

Date: _____

Inspector's Name: _____

MEDICAL AND FIRST AID

- | | Yes | No |
|---|-----|-----|
| 1. Are first aid kits accessible and identified? | ___ | ___ |
| 2. Are emergency eye wash and safety showers available? | ___ | ___ |
| 3. Are daily logs for first aid present and up to date? | ___ | ___ |
| 4. Are first aid kits inspected weekly? | ___ | ___ |

PERSONAL PROTECTIVE EQUIPMENT

- | | | |
|---|-----|-----|
| 1. Have levels of personnel protection been established? | ___ | ___ |
| 2. Do all employees know their level of protection? | ___ | ___ |
| 3. Are respirators used, decon, inspected, and stored according to standard procedures? | ___ | ___ |
| 4. Have employees been fit-tested? | ___ | ___ |
| 5. Is defective personal protective equipment tagged? | ___ | ___ |
| 6. Does compressed breathing air meet CGA Grade "D" minimum? | ___ | ___ |
| 7. Are there sufficient quantities of safety equipment? | ___ | ___ |

FIRE PREVENTION

- | | | |
|--|-----|-----|
| 1. Are hot work permits available on site? | ___ | ___ |
| 2. Is smoking prohibited in flammable storage areas? | ___ | ___ |
| 3. Are fire lanes established and maintained? | ___ | ___ |
| 4. Are flammable dispensing systems grounded and bonded? | ___ | ___ |
| 5. Are proper receptacles available for storage of flammables? | ___ | ___ |

WELDING AND CUTTING

- | | | |
|--|-----|-----|
| 1. Are fire extinguishers present at welding and cutting operations? | ___ | ___ |
| 2. Are confined spaces, tanks, pipelines, etc. tested prior to cutting and welding operations? | ___ | ___ |
| 3. Are hot work permits available? | ___ | ___ |
| 4. Are proper helmets and shields available for welding and cutting operations? | ___ | ___ |
| 5. Are welding machines properly grounded? | ___ | ___ |
| 6. Are oxygen and fuel gas cylinders stored a minimum of 20 feet apart? | ___ | ___ |
| 7. Are only trained personnel permitted to operate welding and cutting equipment? | ___ | ___ |

HAND AND POWER TOOLS

- | | | |
|--|-----|-----|
| 1. Are defective hand and power tools tagged and taken out of service? | ___ | ___ |
| 2. Is eye protection available and used when operating power tools? | ___ | ___ |
| 3. Are guards and safety devices in place on power tools? | ___ | ___ |
| 4. Are power tools inspected before each use? | ___ | ___ |
| 5. Are non-sparking tools available? | ___ | ___ |

TRUCK VEHICLES

- | | | |
|--|-----|-----|
| 1. Are vehicles inspected before each use? | ___ | ___ |
| 2. Are personnel licensed for the equipment they operate? | ___ | ___ |
| 3. Are unsafe vehicles tagged and reported to supervision? | ___ | ___ |
| 4. Are vehicles shut down before fueling? | ___ | ___ |
| 5. When backing vehicles, are spotters provided? | ___ | ___ |
| 6. Is safety equipment on vehicles? | ___ | ___ |

EMERGENCY PLANS

- | | Yes | No |
|--|-----|-----|
| 1. Are emergency telephone numbers posted? | ___ | ___ |
| 2. Have emergency escape routes been designated? | ___ | ___ |
| 3. Are employees familiar with the emergency signal? | ___ | ___ |

MATERIALS HANDLING

- | | | |
|--|-----|-----|
| 1. Are materials stacked and stored as to prevent sliding or collapsing? | ___ | ___ |
| 2. Are flammables and combustibles stored in non-smoking areas? | ___ | ___ |
| 3. Is machinery braced when personnel are performing maintenance? | ___ | ___ |
| 4. Are tripping hazards labeled? | ___ | ___ |
| 5. Are semitrailers chocked? | ___ | ___ |
| 6. Are fixed jacks used under semitrailers? | ___ | ___ |
| 7. Are riders prohibited on materials handling equipment? | ___ | ___ |
| 8. Are cranes inspected as prescribed and logged? | ___ | ___ |

FIRE PROTECTION

- | | | |
|--|-----|-----|
| 1. Has a fire alarm been established? | ___ | ___ |
| 2. Do employees know the location and use of all fire extinguishers? | ___ | ___ |
| 3. Are fire extinguishers marked and inspected weekly? | ___ | ___ |
| 4. Are combustible materials segregated from open flames? | ___ | ___ |

ELECTRICAL

- | | | |
|--|-----|-----|
| 1. Are warning signs exhibited on high voltage equipment (250 V. or greater)? | ___ | ___ |
| 2. Is electrical equipment and wiring properly guarded? | ___ | ___ |
| 3. Are electrical lines, extension cords, and cables guarded and maintained in good condition? | ___ | ___ |
| 4. Are extension cords kept out of wet area? | ___ | ___ |
| 5. Is damaged electrical equipment tagged and taken out of service? | ___ | ___ |
| 6. Have underground electrical lines been identified by proper authorities? | ___ | ___ |
| 7. Has a positive lock-out procedure been established by the project electrician? | ___ | ___ |

SLINGS AND CHAINS

- | | | |
|---|-----|-----|
| 1. Are damaged slings, chains, and rigging tagged and taken out of service? | ___ | ___ |
| 2. Are slings inspected before each use? | ___ | ___ |
| 3. Are slings padded or protected from sharp corners? | ___ | ___ |
| 4. Do employees keep clear of suspended loads? | ___ | ___ |

HEAVY EQUIPMENT

- | | | |
|--|-----|-----|
| 1. Is heavy equipment inspected as prescribed by the manufacturer? | ___ | ___ |
| 2. Is defective heavy equipment tagged and taken out of service? | ___ | ___ |
| 3. Are project roads and structures inspected for load capacities and proper clearances? | ___ | ___ |
| 4. Is heavy equipment shut down for fueling and maintenance? | ___ | ___ |
| 5. Are back-up alarms installed and working on equipment? | ___ | ___ |
| 6. Are designated operators only operating equipment? | ___ | ___ |